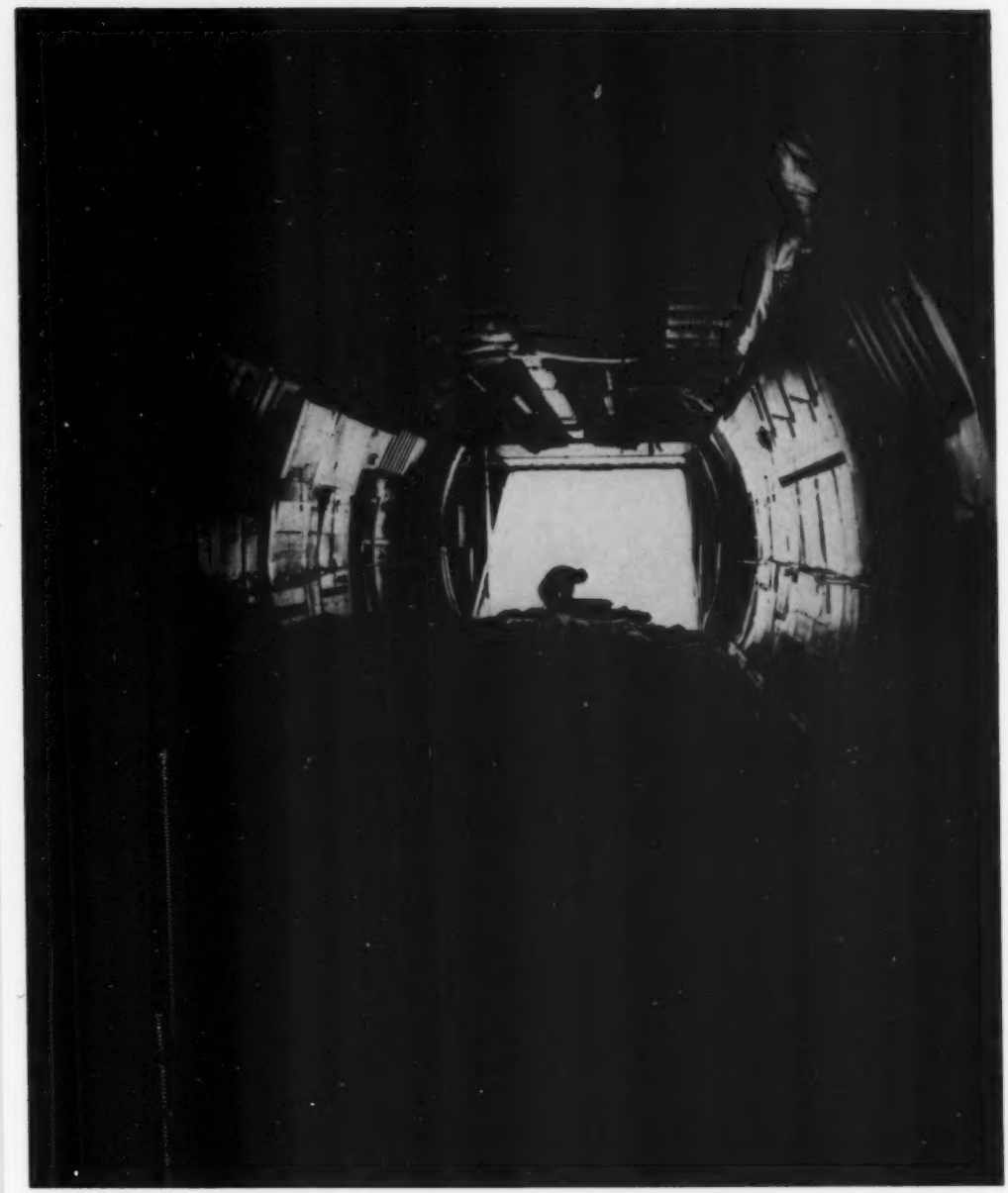
The MAC Flyer

OCTOBER 1975



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For Greater Efficiency
in MAC Air Operations

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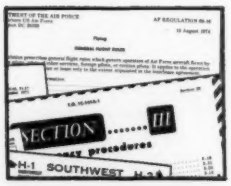

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Honorable Mention
1975 MAC Flying Safety Writing Contest

Reduced flying time can make each flight seem like a dollar ride in a new aircraft.

Fuel for Thought

by 1st Lt John Mokri
1551 FTS
Hill AFB, Utah

This is the story of a pilot facing the problem of staying proficient with fewer available flying hours. Captain Power and his copilot, Lieutenant Newgrad, are about to embark on their first flight in quite some time.

The day dawned bright and clear as our intrepid aviators completed the paperwork. "Looks like the weather's gonna be no sweat," beamed Captain Power. He was glad because he had not flown in IFR conditions for eight months.

As the two men dutifully marched out toward the flightline, the banter was light and cheerful. "You did bring the picture, didn't you?" asked Newgrad.

"What are you talking about? What picture?" asked Power.

"Well, we need something to help us recognize our aircraft, don't we?" chuckled Newgrad.

Upon entering the cockpit, the

Fuel for Thought

aircraft commander was overjoyed at having once again found his Dash One and checklist. He had carelessly left it behind on his last flight. The pre-flight was completed in record time.

As the two pilots stepped into the chopper, the copilot noticed that haze had moved in and visibility was deteriorating. "Hey, I thought we were gonna have clear and a million all day," he said.

"Relax. If you'll wait just a minute, the dust from my checklist and the seats should settle," joked Captain Power. Neither pilot noticed the cloud layer forming to the east, but the checklist was accomplished with only minor glitches once the gear handle was located and the correct button depressed to silence the fire warning horn test circuitry.

The tower granted permission for the hover check and gradually the noise and rotation of the whirling rotor blades were converted into lift. The helicopter hovered a bit unsteadily at first (the pilots logged four landings in a scant 30 seconds of flight,) but settled down nicely once Captain Power got his "touch" back. The aircraft performed to expected standards and Captain Power keyed his interphone. "Are you ready to slip the surly bonds?"

The clowning lieutenant retorted, "Yes, but I'm not fixed wing-qualified." The captain didn't catch the joke.

The undercarriage clicked firmly into the well and a gradual climb was initiated.

"Approach control, request direct to Bagley intersection for a tacan approach, over," the captain's voice boomed out.

A few harsh words from approach and a quick thumb-through of the booklets finally convinced the AC that his favorite fix-to-fix had been retired. His next request, for radar vectors to an ILS, was granted forthwith. The weather report that accompanied his clearance assured him of two things: the cloud buildup from the east had arrived and now he really had an opportunity to chop the rusty edges from his instrument flying. Dutifully monitoring his navaids, including the new sounds from the local ADF, the AC pressed on with the approach. And what a final approach it was. The airspeed averaged 90 knots (usually between 60 and 120 knots). Just as the aircraft was about to cross the localizer course for the third time, Lieutenant Newgrad, abandoning his wisecracking, piped up,"Fluctuations! Number two engine!"

The illumination of the fire warning lights convinced Captain Power that something was awry. It seemed like an eternity before the fumbling twosome located appropriate bold face items in the checklist. The alert approach controller noticed the aircraft wandering off its intended heading and managed to vector it safely to a landing.

* * *

This incident is exaggerated somewhat, but only in the interest of making a point. Most of us have already experienced effects of the flying hour cutback that began back during the fuel shortage. Because of this, we should each ask ourselves, "How many hours a month do I need to main-

RCE

AF REGULATION 60-16

15 August 1974

Flying

GENERAL FLIGHT RULES

light rules which govern operation of Air Force aircraft flown by
rices, foreign pilots, or civilian pilots. It applies to the operation
e only to the extent stipulated in the loan/lease agreement.

Section III

O. 1C-141A-1

ON III

cy procedures

THWEST H-2

SOUTHWEST

PANEL 8

OPSHT

TATES GOVERNMENT

RMATION PUBLICATION

GH ALTITUDE - U.S.

nd above 18,000' MSL

1"=38.5 NM

3-19
3-31
3-29
3-14
3-30A
3-30A
3-25
3-31
3-34
3-44
3-44

tain proficiency?" Answers will vary, depending primarily on three factors: experience level, type aircraft, and mission.

Generally speaking, younger pilots express the need for more flying time than do their more seasoned counterparts. The second factor affecting basic proficiency is the type of aircraft flown. Each aircraft has its own flight characteristics and degree of complexity. Consider your personal experience in flight school. Standard procedure there was to progress from the simple to the complex. Obviously it takes less flying to stay proficient in an aircraft that is easy to fly than in a more complex, high performance machine.

The third consideration is the type of mission. For example, most helicopter pilots will agree that some of their most unnerving moments come during night water hoist missions. A night approach to a hover over open water, using smoke marker flares for a reference, opens the door for all the classic spatial disorientation phenomena discussed during every instrument refresher course. Regardless of the type of aircraft you fly, some filghts are more difficult and require a higher degree of proficiency than others. Your list of "favorite" missions might include night formations, night gunnery, or air refueling.

Here are some suggestions that may help you stay proficient. Preface them with the thought that nothing can completely take the place of actual flying time.

- First, it is each crew member's responsibility to keep abreast of the latest information in regulations, flight manuals, local procedures and policies. While this knowledge does not necessarily guarantee a safe flight, it does improve your odds considerably. Don't get caught with out-of-date manuals and a request for a non-existent procedure.

- A flight simulator can be an invaluable aid to you for maintaining proficiency in coping with emergencies and improving your cross-check.

- Get into the flight manuals more often, particularly section three. If you haven't flown in awhile, you will be surprised at how quickly all those numbers, cautions, and procedures coalesce into a meaningless blur.

- Utilize your airborne time. Don't waste time flying straight and level when you need work on instruments, transition, or emergency procedures. Make a continuing effort to improve your cross-check and general aircraft control.

- Finally, avoid the dangerous tendency toward over-confidence. If you have serious doubts about accepting a particular mission, ask for assistance. A ride or two with an instructor or a verbal clarification of a procedure or policy could mean the critical difference between knowing what you are doing and tempting fate. Don't overlook the possibility of hopping on board for some jumpseat time if available. A lot can be learned by just observing.

Don't let dwindling proficiency set you up as the subject of a story such as this — take action now to offset the cutbacks in "hands-on" flying.

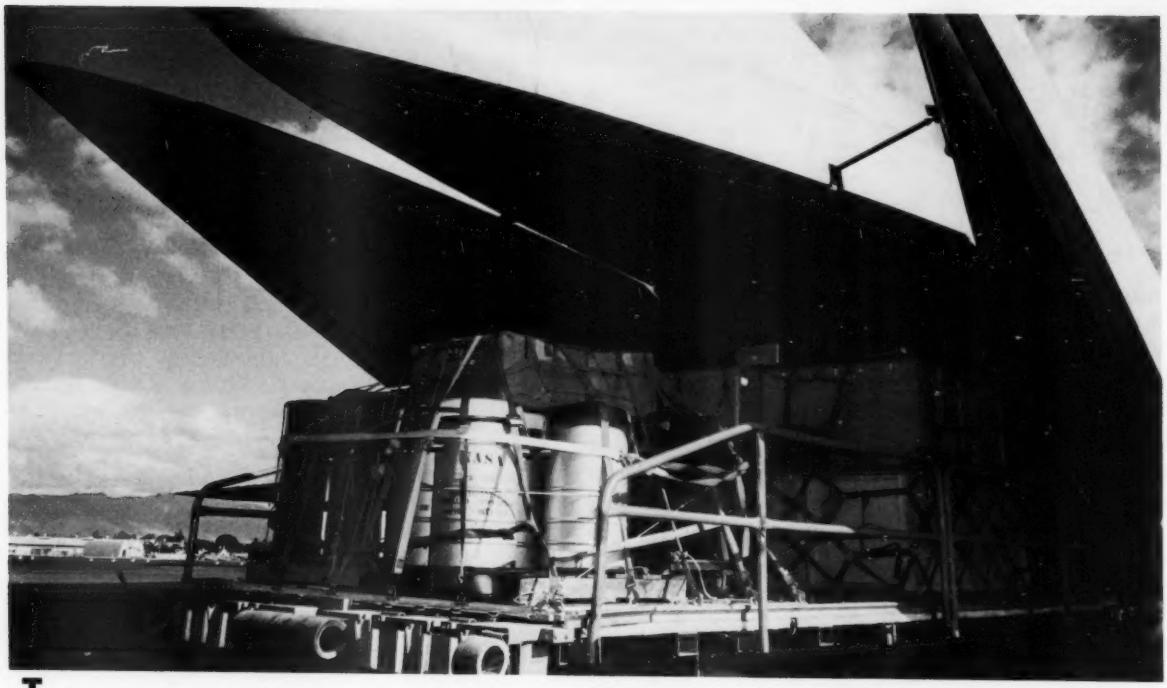
ABOUT THE AUTHOR

1st Lt John Mokri is an H-3 instructor pilot assigned to the 1551 FTS at Hill AFB, Utah. He was trained by the Army helicopter schools at Mineral Wells, Texas, and Ft. Rucker, Alabama. After completion of further training at Hill AFB, he was assigned to the 51 ABW (PACAF), at Osan, AB, Korea, returning to Hill AFB in January 1974. Lieutenant Mokri recently graduated from IPIS, Randolph AFB, Texas.

Is it just another ten-pallet load of "general cargo"? A few "surprise" pallets mixed in with the rest could cause more than heartburn.

That Tied Down Hazard in the Cargo Compartment

by MSgt Edward G. Miller, MAC/DOZSC
and
Robert A. Maschal, MAC/IGFX



Those who fly the airlift mission probably don't like to think about the subject of this article — the inherent danger of the hazardous material that is sometimes transported in the back of our airplanes. But like it or not, the potential for catastrophe while airlifting this material is a fact no one can afford to ignore.

Events of the past few years, the most recent of which was the crash of a commercial aircraft near Boston, Mass. ("Acid in the Hold," THE MAC FLYER, June 1975), focused attention on a problem that safety experts have been aware of for some time — the lack of a foolproof system guaranteeing proper packaging, handling, and preparation of hazardous cargo for air shipment.

Until the problem is solved — and the Department of Transportation is working on it — the perplexing question facing aircrews is what can be done to prevent a recurrence of the Boston scenario. For MAC crews, one answer is to bone up on present rules and regulations that apply to transporting hazardous cargo in

the MAC system — before it's loaded on your aircraft.

This material is no longer referred to as "dangerous material." A message from the Air Force Chief of Staff in June directed that the term "hazardous material" be used in lieu of "dangerous material" to identify explosives and other dangerous articles. An upcoming change to AFM 71-4 will reflect this. This article addresses hazardous material as defined in AFM 71-4 and does not include procedures for nuclear weapons and components which are shipped under other directives.

An aircrew that is transporting hazardous material without knowing it could find itself in a dangerous stuation. That's what happened to the crew in the Boston crash. They never realized what was causing their cockpit to fill with smoke and, therefore, did not take proper steps to combat the emergency. While the MAC system is designed to head off errors of this sort, the most effective measure aircrews can take to play it safe is to refuse cargo not labeled and manifested. "Letter-perfect" documentation may not guarantee that the contents of a container will match its label, but

"They never realized what was causing their cockpit to fill with smoke and, therefore, did not initiate proper emergency procedures."

Too Many Cooks

But regardless of the term used to describe the cargo, one of the reasons for error in preparing it for shipment is that a lot of people are involved, not all of them military personnel, before it's shoved into your bird. And the more handlers, the greater the chance for error. The material originates at the point of manufacture and must often be transported by surface to air terminals and then loaded on your aircraft. Preparation and packaging requirements for surface transportation are not always as strict as those for air transportation. This could spell danger if there is a slip-up and the material is loaded aboard your bird without proper preparation for air shipment. Knowledgeable aircrews and MAC transportation personnel often detect these discrepancies before they grow into in-flight problems.

the odds are heavily against serious errors in properly documented shipments. Sometimes even properly documented cargo is improperly packaged. When there is doubt as to whether it is properly packaged, a reference to AFM 71-4, Preparation of Hazardous Materials for Military Shipment, and DD Form 1387-2, Special Handling Data/Certificaton, should be used to clear it up. If you still have doubts after referring to these, don't take off with the cargo aboard unless you're willing to risk the highest stakes in a needless game of chance.

Since cargo preparation and shipping procedures are very often a murky-gray area for aircrews, occasionally a crew accepts a faulty or poorly documented shipment. To give you an idea of how the system works, here's a brief summary of responsibilities in the shipment of hazardous material.

The Shipper

The shipper is responsible for properly preparing hazardous material for transportation. This includes marking containers, attaching labels when required, packaging, and completing a DD Form 1387-2 if the shipment is to be moved by air. Too often this is where problems arise. A lack of knowledge by shippers sometimes results in improper packaging and documenting.

Transportation

Personnel in MAC air terminals are responsible for inspecting shipments before accepting them into the airlift system. If cargo is improperly packaged, or otherwise doesn't comply with directives, it isn't allowed aboard. These personnel also prepare the load message that is eventually transmitted by the Operations Center. Aerial port personnel brief the loadmaster, prepare the DD Form 836-1 (Briefing for Aircraft Commanders Transporting Explosives or Other Dangerous Articles), and prevent incompatible shipments from being loaded on the aircraft. Aerial port personnel also furnish DD Forms 1387-2 for each shipment of hazardous material. This form provides handling details and actions required in the event of an emergency.

Aircrews

The last safeguard in the system is the crew. After being

briefed concerning hazardous cargo, the loadmaster must annotate the information listed on the weight and balance form. The aircraft commander is required to annotate the required information — (contained on the DD Form 836-1, Briefing for Aircraft Commanders Transporting Explosives or Other Dangerous Articles) on his flight clearance form. It is also the aircraft commander's duty to become familiar with special emergency equipment aboard his aircraft, such as smoke masks and hazardous cargo protective clothing kits. Finally, at least 30 minutes prior to landing with hazardous materal, the aircraft commander must contact his destination airport and verify that his cargo information has been received. If it hasn't, he must furnish the required information from his DD Form 836-1.

Crew responsibility does not end•with engine shutdown. Placards may be required around the aircraft and it is the aircraft commander's job to see that they are posted. One more thing. Was remote parking required? If so, and you forgot to request it or ground control never learned of the requirement, get ready to crank up again and taxi to a remote area. Yes, there are a lot of additional items to accomplish when hazardous cargo is aboard, and the checklist accompanying this article will help you remember what they are.

Military airlift requirements for shipping hazardous materal obviously are potentially more demanding than those of commercial airlines. Fortunately, safeguards established by MAC against error reduce the hazard significantly. But the final protection against that one costly error, as usual, is the crew. It's up to you to render "hazardous material" less hazardous than it might be.

Hazardous Material Checklist for Crews

At Operations Center

1. DD Form 836-1 (Briefing) received and signed for at Operations Center.
2. If explosives are aboard your aircraft, check FLIP Enroute Supplement for destination and en route base explosives capability. Insure load doesn't exceed capabilities.
3. Annotate flight clearance form with hazardous cargo information.
4. Insure that center personnel will include hazardous cargo information in departure message (AM-1).

At Aircraft

1. Check with loadmaster to insure your operations center briefing did in fact cover all hazardous cargo.
2. Check DD Form 365F for location of cargo.
3. Satisfy yourself that crew members can get to cargo in an emergency for jettisoning or other emergency action.
4. Insure protective clothing kits are aboard.
5. Advise crew of smoking restrictions in cargo compartment.
6. If destination or en route bases are not U. S. military, insure placards are aboard, if required.

In Flight

1. Have cargo checked after climbout and periodically during flight.
2. At least 30 minutes prior to landing, contact base and insure appropriate personnel are aware of hazardous cargo aboard. If they aren't, furnish details from DD Form 836-1.

Destination Base

1. Insure base is aware if remote parking is required. Advise tower if any attempt is made to park you on other than a remote spot.
2. Insure placards are posted if required (by base or crew, as appropriate).
3. Report any incidents involving hazardous cargo that occurred during the mission.

Mishaps with a Moral:

Thunderbolt on Final

There are few aeronauts among the living who do not respect the transcendental personality of the cumulonimbus. The files are full of mishaps dealing with ethereal encounters with severe weather, but most of these reports are first hand, i.e., someone lived to tell about it.

Navigating through thunderbumpers at altitude can be a testy experience. But trying the same thing on final approach at the end of a long day in "almost VFR conditions" is something else again — and you'd probably have better luck trying to leap the Snake River Canyon on your skateboard. The first accident in this article is a case in point.

The subject of the second mishap is one with which MAC aircrew members should be somberly familiar. It is the account of a civilian Convair that crashed into a mountain. Unlike some of the recent military accidents, this one occurred during takeoff rather than during the approach. But the lesson conveyed — the importance of terrain awareness — is applicable during both phases of aircraft operations. The penalty for disregarding it may be the same in either.

The twin engine turboprop airliner had been hopscotching around five central U. S. airports during an uneventful mission. About 20 minutes from arrival at its next destination, center advised the F-27 to make a 360-degree turn to the right. A five-minute delay was expected, and the right turn would help keep the aircraft clear of the weather. The crew indicated they could comply.

Cockpit verbals recovered from the voice recorder show that both the pilot and copilot had identified the potential weather problem on their radar.

"We're not going to be able to make it. I don't know, unless we follow it inbound," the first officer stated.

"Okay," replied the captain.

"That's okay?"

"Yeah."

The first officer offered, "It's about 30 miles then from us, between us and the outer marker."

"About over the outer marker."

The first officer agreed, "That's right."

About 15 minutes later, tower informed the aircraft, "You're in sight and cleared to land . . . . wind is, it's been gusting . . . . it's right now, two two zero. It's been around three four zero degrees, holding at two zero but occasional gust to three five."

One minute later, tower reported, "It looks like a heavy rain shower moving right across the approach end of the runway now."

The first officer replied, "Roger, we see it."

That was the last transmission from the flight.

The plane smashed into the ground in a residential area approximately two miles from the runway. Thirty-eight persons aboard were dead and six injured. Both pilots survived but sustained massive injuries.

The Investigation

A witness familiar with aircraft operations provided valuable information during the investigation. He said the aircraft was executing what appeared to be a normal ILS approach when it suddenly climbed 400 to 500 feet and then rapidly descended to about 200 feet above the ground. The witness saw lightning strike the wing just outboard of the left engine. The lightning was followed by a rolling flash of fire. The F-27 again lost altitude and, after several "evasive maneuvers," disappeared into the rain and trees.

The National Transportation Safety Board reported the following:

"An experienced pilot should have been aware of the updrafts and downdrafts associated with . . . "

" . . . the Board believes there were sufficient cues available to the captain to alert him to the possibilities of turbulence, downdrafts, and limited visibility if he continued the approach . . . "

The board determined that the probable cause of the crash was the aircraft's encounter with a downdraft following the captain's decision to initiate and continue an instrument approach into a thunderstorm. The captain's decision was probably influenced by the lack of timely issuance of a severe weather warning by the National Weather Service and the improper assessment of weather conditions in the terminal area by the flight crew and flight dispatcher.

Moral

An old story, often repeated — only with different characters, different airplanes, and names omitted to protect the guilty. You've already heard it all, over and over. And like any thunderstorm-fearing aircrew member, you respect the hail, St. Elmo's fire, and Damnation of the Cumulonimbus. You know you'll never "snatch defeat from the jaws of victory" by playing tag with a questionable cumulo. And by those who have had an encounter with a severe thunderstorm and lived to whisper about it, the lesson should be well learned: "It's his sky; give him a wide berth."

Why do aircrews fly through thunderstorms? We usually find a combination of factors ranging from equipment problems to just plain poor planning. The "poor stick" malady (paranoia?) has led many crews into turmoil. To initiate a go-around or circumnavigate a thunderstorm doesn't detract from your "macho"; it may well indicate the maturity and sound judgement that we all possess but sometimes fail to display.

Adapted from
National Transportation Safety Board
Report Number NTSB-AAR-74-5

Mountain Suckertrap

As the Convair taxied toward the runway on the second leg of flight, the crew contacted a nearby Flight Service Station and requested activation of their IFR clearance. Flight Service radioed the crew that center would call back with the clearance, but the crew never acknowledged the transmission. Meanwhile, the airport manager watched the aircraft taxi toward runway 12 and attempted to contact the crew on unicom frequency. After several unsuccessful attempts, he returned to the ramp and watched the old recip fade into the dark sky.

Shortly after takeoff, the crew reported to Flight Service that they were climbing VFR. In the Flight Service Station, the specialist heard the call, but repeated attempts to raise the Convair and deliver the IFR clearance were unsuccessful.

A sudden bright flash in the black, moonless night and the distant sound of an explosion caught the attention of the airport manager. He contacted the Flight Service Station and requested the flight

status of the Convair, advising of the fire and explosion. It wasn't long before the crash of the Convair was confirmed.

The aircraft had slammed into the 6,100-foot level of a 6,280-foot mountain about five miles east of the airport. All 40 occupants of the plane were killed. Several persons who saw the aircraft during its last few moments of flight reported green and white lights of an aircraft climbing on a southerly course, parallel to the mountain range. They watched the aircraft for about one minute and then saw a burst of flames and heard an explosion.

A pilot of a helicopter that flew to the scene shortly after the accident stated that it was so dark that he could not discern the mountain ridges or the skyline either from the valley before departure or en route to the crash site.

Accident Analysis

Mountainous terrain within three miles of the airport rises to 1,000 feet above the airport elevation. Beyond three miles, the terrain rises rapidly to 11,000 feet. Investigators concluded it was so dark that unless a pilot was thoroughly familiar with the terrain features in the area, he would be unable to see the mountains or determine his proximity to them, even at close range.

The prescribed IFR departure procedure at the airport requires a climb to 8,000 feet within two miles of the airport. This is because the terrain in the area renders visual flight unsafe when visibility is less than two miles. When weather conditions at the airport are VFR, an IFR departure procedure is not required. Presumably, the increased visibility enables the pilot to see and to avoid the mountains during climbout.

In daylight VFR conditions, a visual climbout at distances beyond two nautical miles can be accomplished without difficulty since the mountains to the east and west are visible.

Both pilots had previously flown into the airport, and the fact that they had flown in during daylight hours about an hour before the accident led investigators to conclude that both were aware of the surrounding hazardous terrain. However, the accident board did not rule out the possibility that the excellent visibility that existed at the time of descent created a degree of complacency with respect to the visual climbout. The board also considered the possibility that the crew might have become distracted.

The first officer had been ill for four days prior to the accident with a flu-type virus and had been in continuous flight duty status for more than 15 hours before the accident. An autopsy revealed that his stomach was empty. This factor, in combination with long duty hours and the fatiguing after effects of the flu, may have rendered the first officer physically and mentally unalert, investigators revealed.

Probable Cause

The National Transportation Safety Board was unable to determine the probable cause of this accident. The reason why the flight crew did not maintain a safe distance from hazardous terrain during night visual flight conditions could not be established.

Although MAC aircraft generally operate under instrument flight rules, all aircrews should seriously consider the consequences of operating visually in such an environment as this. Illusionary factors often render the eyesight ineffective for height and distance judgment. In this case, the mountain obscured all skyline and terrain profiles and apparently overcame the crew's awareness.

Adapted from
National Transportation Safety Board
Report Number NTSB-AAR-75-1

Global Notes

air force honors

Air Force has chosen four MAC units to receive USAF Flight Safety Certificates for meritorious achievements:

The 89 MAW, Andrews AFB, Md., flew 30,000 safe hours during the period 1 January 1973 to 31 December 1974, to become eligible for the award. The 89th accumulated more than 229,000 accident-free hours since activation in 1947.

The 53 WRS, Keesler AFB, Miss., flew three consecutive accident-free years, 1972 through 1974, achieving a total of 60,000 hours since January 1967.

The 33 ARRS, Kadena AB, Okinawa, flew three accident-free years, 1972 through 1974, completing more than 12,000 hours since March 1970.

The 67 ARRS, RAF Woodbridge U. K., flew three years, 1972 through 1974, without an accident, setting their record at 54,000 hours of safe flying since January 1961.

The 6 MAS, McGuire AFB, N. J., was awarded the USAF Nuclear Safety Certificate for outstanding achievements in nuclear safety in 1974, which included flying a total of 194 nuclear weapons airlift missions without accident or incident.

MAC award winners

MAC Distinguished Individual Safety Awards were earned by the following personnel for their actions during emergencies:

Capt Clyde E. Herzog, 774 TAS, Dyess AFB, Texas. Following a routine engine run on a C-130E, Captain Herzog and his crew were performing engine shutdown when smoke was observed coming from behind the pilot's side circuit breaker panel. Capt Herzog ordered all electrical power turned off. The circuit breaker panel was opened, revealing smoke and flames coming from the auxiliary hydraulic pump relay. Instructing the crew to evacuate, Captain Herzog obtained a fire extinguisher from the aft flight deck wall and extinguished the flames. Because of Captain Herzog's swift reaction, the damage to the aircraft was confined to a relay and wiring.

TSgt Ronald E. Downs, 14 MAS, Norton AFB, Calif. While performing preflight duties as loadmaster on an overseas C-141 passenger mission, Sergeant Downs detected serious defects in the installation of passenger oxygen masks. Several masks had been improperly installed so that their supply lines were badly twisted. In the event of a rapid decompression, this could have proved fatal to passengers since their oxygen supply would have been cut off. The discovery of this dangerous discrepancy was the result of the unusual alertness of Sergeant Downs.

2d Lt Alfred Rodriguez, 60 OMS, Travis AFB, Calif. After observing smoke coming from a C-5 as it prepared to taxi toward the takeoff runway, Lieutenant Rodriguez, flightline duty officer, called fire trucks to the scene. He then ran to the aircraft to alert the flight crew and found the crew in the process of opening a troop compartment hatch and deploying the escape slide. Although initially hampered by the exhaust from an operating engine, he was finally able to grab, align, and stabilize the wildly blowing escape slide with the assistance of a crew member who had exited the aircraft to assist. Lieutenant Rodriguez then aided each of the passengers as they slid down the escape slide, assisting them to their feet and to an area clear of the aircraft.

bully beef express captures prize

The MAC trophy for Outstanding Airlift Squadron of 1974 went to the 6 MAS, McGuire AFB, N. J. General Carlton presented the award to Lt Col Donald M. Taylor, 6 MAS commander. During the ceremonies, Colonel Taylor was also presented with the USAF Nuclear Safety Certificate.

The squadron's excellent overall performance included flying 16,000 hours during the year without an accident. The Bully Beef Express has flown a total of more than 124,000 accident-free hours over the past five years.

In My Mind's Eye

Time for one more cup of coffee before easing down from flight level 350. Everything's going fine. What the hell —

It hasn't been too rough a trip . . . all in all. Around the horn in five days and we're headed home . . . not that bad. Glad I got most of my Christmas shopping done . . Barb and I will be able to relax a little before getting into the spirit of the holiday season. With any luck, I'll get to spend Christmas and New Year's both at home. Mother MAC owes me anyhow . . . last year it was New Year's at Incirlik and the year before, Christmas in Managua.

It won't be long now . . . home to the wife and kiddies. Let's see, about three hours to go, 39,000 feet, .74, and 82,000 on the fuel. No pax and just a pallet or two of cargo . . . about time to turn this holiday express over to my faithful copilot.

"Bill, you want to take it for awhile? I'll just lean back and relax for a half hour or so."

Thank you, my son. Ah, yes, the young captain will make a fine AC someday. A good stick and works those radios like a Boston Center pro. Ho hum . . . and visions of sugar plums . . .

. . . Uh! What's that? Clear air turbulence. Sure is tough for a MAC AC to nurture a no-notice nap.

"Yeah, let's take it down to 350. If that's where they say it's smooth."

Sharp troop. I didn't even hear his call to center. I must've been in a real stage four sleep. Get my glasses on . . . there.

Level 350 already? Damn, I must have been dozing again.

There's the VOR. DME 194. Supernav has done it again. C'mon, Plummer, wake up! Got to navigate the 48 . . . give Magellan a break.

"Lieutenant Jones, how about a cup of black coffee? Gotta get these eyelids separated."

Yes, Major, Sir? He's got to be a Zoomy. He's sat in that jumpseat for hours observing the aura of aurora borealis and this aerospace machinery. Ah, but he'll make it. Look at that! Hot black coffee in a flash. Here you are, Sir. You're welcome, Sir. I wonder how long that will last.

Son of a . . . What was that! Good God, it sounds like the navigator's panel exploded. I'll just get turned around and see if Joe is okay. Damn coffee . . . damn clumsy me. God, it's hot . . . burned my hand . . . it's still tingling.

"Hey, Joe!"

Why is it so foggy? I just can't shake the sandman. Funny, Joe's putting on his oxygen mask. Oh, my God, decompression! Get rid of the coffee . . . get this mask on . . . take these kids home.

Damn glasses! So this is quick-donning, huh? There, got the glasses out of this mess. Now . . . what the hell . . . my headset's caught. Who designed this Rube Goldberg outfit!

Uhh, must be a dream . . . I'm so tired . . . wonder what Barb got me for Christmas . . . I'll just relax . . . and when I wake up . . .

No Melodrama . . . It Happened

If the preceding dramatization seems a bit "far out," you may be surprised to learn that it is based on an actual experience that occurred during a C-141 rapid decompression. Here are some of the problems that crew ran into.

★ The right seat copilot could not transmit through his oxygen mask microphone after adjusting the sweep-on mask to the proper position. He inserted his boom mike under the mask and transmitted that way.

★ The copilot in the flight exam-

...It Happened

iner seat also experienced communication problems as the microphone plug cord at the base of his mask apparently became disconnected. He also positioned his boom mike inside the mask and was able to transmit satisfactorily.

★ The flight engineer inadvertently unplugged his interphone cord (he apparently stepped on it) and was delayed in gaining communication with other crew members.

★ The aircraft commander, experiencing difficulty donning his mask, developed hypoxia. A copilot positioned the AC's mask to restore proper breathing.

★ For a few minutes the crew's only contact with the outside world was through the navigator. And though the navigator advised ground agencies of the situation and received clearance to descend, he could not verbally communicate with other crew members because of the difficulty they were experiencing.

The MBU-10/P was introduced in January 1974 and the transition to it was completed a year later. Although it's a relatively new piece of equipment, there's no reason why crew members should have problems if proper donning techniques are used. Several relatively recent decompression incidents have demonstrated exactly why crews should know how to use this invaluable life support item. Do you?

His line was "Yes, Ma'am, I fly Jets," but he was all thumbs when it came to his oxygen mask.

It's really pretty simple: Grasp the mask shell (**not** the hose) over the yoke tab and anchor the rear strap just below the crown of your head.

Putting on Airs at Altitude

What's that — "quick" donning, you say? Those who have experienced problems during an actual explosive decompression might be tempted to call the MBU-10/P mask a "trick" donning device.

After 20 years of experimenting with various life support devices aimed at preserving one vital sign, i.e., breathing, the Air Force finally bought what was heralded as the absolute "living" end: the MBU-10/P sweep-on mask.

Available on a variety of MAC aircraft (C-5, C-141, and T-39), it offers certain advantages: no more monthly nose-hose checks for crew members. And you report for duty less encumbered with G.I. personal equipment; therefore, you can carry more *personal* equipment; e.g., cameras, rations, cigarettes, booze, etc.

The manufacturers of the sweep-on insist that their product is a "quick" rather than "trick" device. Only a few simple precautions, common sense, and a little practice will make you an expert. No Oscars for your performance, just the added years for reminiscing about flying MAC heavies.

The accompanying photos show "how to" and "how not to" get hosed.

Pull the mask up and forward, fully extending the spring tensioners on both sides of the harness.

The secret is maintaining full travel on the tensioners until the mask is lowered into the proper position, thus avoiding contact with headset or eyeglasses.

Then relax, sigh, snug it up, and BREATHE.

Your headset can be a problem if you don't extend the tensioners.

Eyeglasses can be a problem **only** if you do it wrong. Extend those tensioners!

OR you could do everything wrong and . . . take a nice nap.

A rare interview with the veteran organizer and coordinator of foul weather operations over North America.

THE VOICE OF WINTER

by Maj Albert R. Barbin, Jr.
Associate Editor

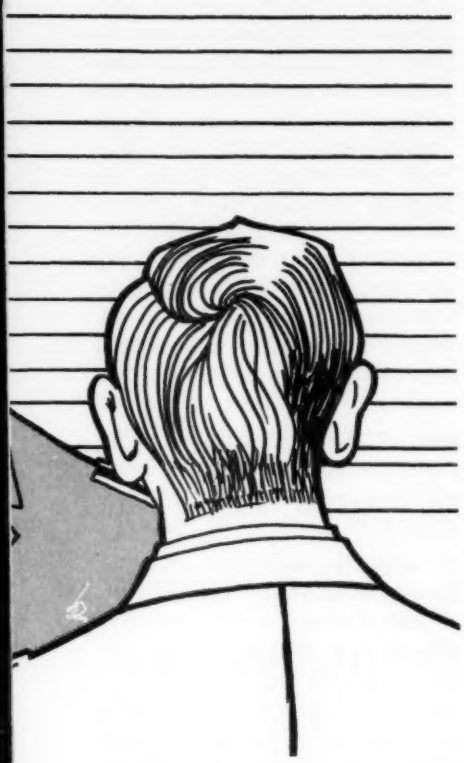
After weeks of persistent coordination, THE MAC FLYER finally arranged an interview with Dr. Cicero Stratus, the noted cloud coordinator. Among his distinguished accomplishments are his participation in the Great Northeast Blizzards of 1969, Hurricane Camille, the cloudburst in Sioux Falls, South Dakota, ice storms throughout the Southeast in '72, and consistent harassment of aircrews during any and all winter months. Currently he is Director of Special Operations, NAWAC (North American Weather Area Command) and is presently coordinating a slow-moving cold front through the Midwest. In spite of hectic, last minute preparations for winter operations, Dr. Stratus took time out for this interview.

MAC FLYER: Dr. Stratus, welcome to MAC headquarters.

DR. STRATUS: Thank you. I'm delighted to be here. It's been a torrid summer throughout much of the country and I am much relieved that winter is just about here.

MAC FLYER: According to our fact sheet, your operational background seems to concentrate on winter operations. Could you give us some insight into your specialty and a brief summary of your background?

DR. STRATUS: Certainly. My preference for winter operations stems largely from my childhood years in the Canadian Maritime Provinces. You might call it a matter of conditioning. Following my initial education, I moved on to the Gulf of Alaska where I spent



the next six years doing both undergraduate and graduate work in Winter Kinetics and Precipitation Dynamics. In aviation language that's ice fog, clear and rime icing, turbulence, low ceilings and visibility, varying degrees of obscuraton, snowstorm formations, freezing rain, and sleet. Following acceptance into NAWAC, I received a Fogs Fellowship to the Royal Weather Establishment in London. There, you might say, I put the icing on winter disciplines. Since then, I've been completely involved in NAWAC operations. Frozen in my present job, it seems.

MAC FLYER: What is the mission of NAWAC?

DR. STRATUS: In spite of suspicions to the contrary, our primary mission is not necessarily to harass aircrews and the general population, but to cleanse the earth's atmosphere, irrigate continents, and maintain the earth's ecosystem. This mission is inviolate.

MAC FLYER: You could have fooled me. But never mind. As you know, winter often brings havoc to flying operations and occasionally precipitates distressing moments to crews. Would it be possible to coordinate with NAWAC and disperse hazardous flying weather over remote areas and out of our areas of peak airlift arrival and departure?

DR. STRATUS: Out of the question. After several million years of successful winter operations, we can't suddenly start bending the rules to accommodate select groups. Once we receive our frag from higher authority, forces are put in motion that cannot possibly be reversed.

MAC FLYER: Ah, I see. Then perhaps you can recall specific instances of pilot error during winter IMC conditions?

DR. STRATUS: Of course. One that immediately comes to mind involved a Boeing 727 last winter. During climbout to flight level 310, the aircraft's angle of attack progressively increased to the point where it stalled, and subsequently broke up in an accelerated spiral. Investigators found both pitot heat switches off.

Then there was that chilling experience a couple of years ago when one of your own C-5 pilots attempted to take off with snow on the stabilizer. He had the yoke positioned aft, but the aircraft failed to rotate until approximately five inches of wet, slushy snow blew off the horizontal stabilizer. He was lucky. Had it been a few degrees colder, the snow would have bonded to the skin and destroyed its aerodynamic function.

MAC FLYER: Dr. Stratus, in view of the obvious winter flying hazards, do you think it is possible for flying operations to be conducted safely?

DR. STRATUS: Oh, very definitely, with few exceptions, if aircrews exercise proper precautions.

MAC FLYER: What kind of precautions?

DR. STRATUS: Well, the first step is to determine which of my conditions are likely to be encountered en route. If the forecast includes freezing rain, moderate to severe clear or rime icing — stay out! Anti-ice and de-ice equipment may not be able to arrest heavy ice accumulations. But such precautions must begin on the ground. Subfreezing temperatures, and winter precipitation, amplified by stiff north winds have a detrimental effect on many aircraft components — from minute gyro bearings to hydraulic O-ring seals. Lubricants, even synthetic ones, tend to congeal in super cold conditions and must be warmed up sufficiently before

THE VOICE OF WINTER

putting a particular component under a load. A 3,000 p.s.i. burst of super cooled hydraulic fluid on cold-soaked plumbing, hydraulic actuators, and flight control power packs can easily split a line or rupture seals. Delicate navigation and flight instruments, particularly gyroscopic equipment, operate at extremely high r.p.m. on tiny bearings lubricated by micron-thick films of lubricant. We've observed a number of crews cleverly warm up such equipment and instruments by turning on indirect lighting full bright. Enough heat is generated by the light bulbs to raise the temperature, thus prolonging bearing life.

No aircraft is going to fly very well, if at all, with its flying surfaces coated with winter trappings — including frost. Just a thin coating of frost on a wing surface can jack up stall speeds, increase takeoff distances, and degrade climbout performance to where flight may become impossible.

Another winter fact of life that can cause engine icing without any accompanying structural icing is adiabatic expansion. Essentially this is an engine inlet venturi phenomenon whereby moisture rapidly freezes and accumulates in engine inlets and on compressor components during low airspeed and high power settings. Consequences include the likelihood of compressor stalls and possible flameout. When the temperature-dew point spread is five degrees centigrade or less and the temperature is between plus eight degrees and minus 20 degrees centigrade, pilots should select engine anti-ice prior to taxi and leave it on through climbout.

Investigators found both pitot heat switches off.

MAC FLYER: Does this also apply to helicopters?

DR. STRATUS: Sure does. Turbine engines react predictably to adiabatic expansion whether they're attached to T-tail airlifters or Jolly Greens.

MAC FLYER: During the last decade or so, MAC has gradually converted its propeller-driven fleet to an all jet and turboprop force that operates well above most hazardous winter precipitation. Is it safe to assume that structural icing is mainly a problem for low flying aircraft?

DR. STRATUS: That's essentially correct. However, some of you high-fliers have failed to exercise prudence prior to en route climb and descent through forecast icing conditions. You'd be surprised how many jets come roaring down from 35,000 feet through our handywork with their weather equipment off. A few foolishly linger about at intermediate level-

offs. It doesn't take much ice to alter the aerodynamic equilibrium of control surfaces and add to what you fliers call the crew 'pucker' factor.

MAC FLYER: Once a crew receives reports of icing above or below, how should they prepare their aircraft for penetration?

DR. STRATUS: We recommend that crews turn on adverse weather equipment well in advance of penetration during descent and immediately after takeoff when expecting encounters during climbout to altitude.

MAC FLYER: What about aircraft not equipped with wing or empennage anti-ice or de-ice equipment?

DR. STRATUS: That's an easy one because the answer is short. I recommend expeditious descent and climb to minimize exposure. Diversion is another option. However, a last ditch attempt to rid aircraft of accumulated ice may be effected by accelerating to an airspeed that will increase the total temperature indication to ten degrees centigrade or above. The effectiveness of this procedure is due to a function of total temperature (ambient air temperature and airspeed) and humidity. Ice formations should begin to dissipate within five minutes with the total temperature ten degrees centigrade or higher. Slightly lower temperatures take a little longer.

MAC FLYER: What characteristics differentiate airframe icing intensities?

DR. STRATUS: Preceptible accumulations are catalogued as "trace." In this condition the rate of accumulation is slightly greater than the rate of sublimation. This condition is not particularly hazardous even though de-icing or anti-icing equipment is not used unless the duration is one hour or longer.

A slightly heavier accumulation is defined as "light." Such a rate of accumulation may create problems if flight is prolonged for over an hour. Occasional use of de-icing and anti-icing equipment should prevent or remove accumulations.

Aircrews will start experiencing greater difficulty when the intensity moves up a rung to "moderate." Moderate rates of accumulation are such that even short encounters become potentially hazardous.

Finally, the worst kind of icing — "severe." Controlling or reducing severe accumulations with icing equipment is impossible. The only remedy is immediate diversion.

MAC FLYER: We seemed to have highlighted in-flight winter conditions pretty well. Anything else you'd like to say?

DR. STRATUS: Glad you asked that. Don't forget ground movements. A few years back we threw everythng we could at the northeast while a C-141 crew descended into the area — clear and rime icing, sleet, a pinch of freezing rain, the whole works. The pilot had it all together — almost. Broke out at minimums, touched down and decelerated — but not enough. While turning off the runway, the aircraft skidded into a snowbank. We all got a big laugh from his unexpected excursion.

MAC FLYER: I see we're running out of time. Before returning to your duties, do you have any final word for MAC crews?

DR. STRATUS: Just that considering the uncompromising nature of my associates during the period between the autumnal and vernal equinoxes, crews should make time now to review cold weather procedures. You can count on us doing our usual flawless job this winter. See you upstairs.

MAC FLYER: Dr. Stratus. One more thing. Your professional expertise, to a significant degree, usually results in aircrew harassment. Why should you, of all people, agree to this interview?

DR. STRATUS: Gamesmanship, my good man, gamesmanship. I'm one of the best cloud coordinators in the business, and you flying types operate in my domain. Although my agency was not designed to harass aircrews, that is, in fact, a spinoff. A sort of game has evolved and it's no fun when I keep winning all the time.

MAC FLYER: Thank you, Dr. Stratus.

DR. STRATUS: You're — aachooo — welcome. Ah, yes, winter is definitely coming on.

A young lad's response to a school assignment captures the spirit and essense of aircrew teamwork and individual responsibility.

I stumbled across this co-authored manuscript that was written a few years ago. And although the young author has gotten older and wiser (?) and charted a new course for his life, I found some socially redeeming qualities in an otherwise humorous essay. I saw in it a genuine, if unintentional, safety message that is as appropriate today as it was when it was written.

by Maj Orlen L. Brownfield
Associate Editor

"When I grow up, I am going to be a navigator." These were the opening words of a short essay my oldest son was preparing for a school assignment.

"Someday, I will fly the big Starlifter all over the world, like my dad." Mark and I had discussed this occasionally and I always advised against it.

"Be a pilot," I'd say. "The navigator just works hard and gets no recognition. The accolades always go to the pilot. So you be a pilot." But he doesn't listen; if old dad is a navigator, he'll be one too.

Mark is 11 now. When he was ten, he was going to be a scuba diver. But he's older and wiser. And although he doesn't want to be a pilot, at least he's looking to the sky instead of the sea.

"I'm going to be a navigator, just like my dad. He's the best in the world." Now where (blush) did he get that idea?

"My dad can get in an airplane and guide it to any place in the world. He looks at stars and tells where he is. He watches out for the pilots all the time and makes sure they don't run out of gas where there's no filling station." Maybe I talk too much around the kids.

"My dad has saved the govermint lots of money. Sometimes when the pilots are going to crash or run out of gas or not find the airport, Dad gives them the word and everything works out fine. Once I heard him tell about flying in the fog with a bunch of other airplanes and Dad looked in his raydar and told the pilots how to keep from hitting the other guys." I had forgotten that little episode. I wonder where he was hiding when I spun that one.

"Dad says he can do a lot with raydar. He can see three hundred miles ahead of the airplane. He can see islands and clouds and other airplanes. He told me about a kind of cloud we studied in fourth grade science, 'cumulens clouds,' I think. He calls them thunderstorms and says if you fly into one of those, it will break the

My Dad the Navigator

plane up in a million pieces. It scares me, but he says not to worry because he sees them all and tells the pilots how to stay out of trouble. He takes care of all the other guys, too. They've got engineers, but not like on a train. They must work awful hard, cause Dad says one of them sleeps most of the time and gets mad at the navigator when it gets too bumpy to sleep." He doesn't miss a word I say.

"And loadmonsters and lots of riders. Anyhow, there's lots of people and an expensive plane that Dad watches out for. He's a real hero, all right.

"Now he's an eggzaminer and I hear him talk to the other guys about what's really important. He says they should listen to the radios and make sure they are doing what there supposed to. They not only have to find the place to land, but they have to know about all the television towers and mountains and anything else they might hit. They got to be able to see the airport on raydar because lots of times the pilots can't see it because it's foggy or raining or snowing. They have got to make sure that they have gas to go somewhere else in case they never see the airport. And stay out of the big clouds. He says sometimes they fly near enemy territory and you've got to know *exactly* where you are then.

"My dad is real proud of his squadron. He says it's the best in the Air Force. I think it's because he's in it. But he says they've flown over a half a million hours without an accident. They started before I was even born. It's something Dad calls teamwork. I think I know what that means. Jamie and I and Dad and some of the other kids play football in the backyard. Dad says it doesn't matter how big you are; if you work together, you can win, easy. He says on the airplane everybody watches out for everybody else, not like the monitor at school, but they help each other. He says a good crew has rapoor. I'm not sure about that word but I think it has something to do with teamwork too. He says if everybody knows what's happening there's less chance for mistakes. I know he's right. If I could team up with someone in arithmetic, I know I'd do a lot better.

"My dad talks about safety a lot. He makes us kids fasten our seatbelts in the car all the time, even if we're just going to the BX. He fastens his, too. When I complain, he tells me that they wear them in the airplane and that it means you're more grown up. If us kids still complain, he tells about a time when I was very small and we had a bad wreck in the car. I was with him and he made me strap in even though I cried. Neither one of us got hurt. I don't remember — maybe it's just a story.

"But, anyhow, that's how I'd like to be when I get big. It's a lot of responsibility but I want to try it. Dad says I should be a pilot. Honestly, sometimes I wonder about Dad, all the time telling me about some of the stupid things pilots do and then he turns around and tells me I should be one. Well, maybe if I can't be a navigator, I'll be a pilot."

When I finished the essay, I handed it to my MAC wife for her perusal. After several years of MAC togetherness and far-aparted-ness, I was sure she would have an appropriate comment. She just kissed me on the cheek and said, "That's a smart son you've got, Dad." I guessed we were all crazy.

I gave the pencil-scribbled, erasure-laden manuscript back to Mark and told him he had done a fine job. Knowing all he does about navigators at his tender age, he will undoubtedly make a fine MAC pilot.

What I didn't tell him was that the teacher who had assigned the essay probably wouldn't be too impressed with his effort. Her husband is a fighter pilot.

Birdstrike!

The possibility of your bird smashing into one of the natural species is greater this month than during any other. That's a statistical fact based on past experience. This time of year birds are migrating by the millions through almost all of the United States and many foreign lands that our aircraft transit.

If you're unfortunate enough to become a 1975 birdstrike statistic, chances are you'll have a duck, swan, goose, hawk, or flock of smaller birds strike your engine, radome, wing leading edge, or windshield. Last year birdstrikes cost the taxpayers 4.3 million dollars, not to mention untold anxieties of the aircrews involved.

Ironically, as advanced as aeronautics has become, there is still no accident prevention measure effective enough to render the birdstrike threat obsolete. So what is the best way to avoid birds in flight? While THE MAC FLYER has been unable to locate any birdstrike panacea, here are a few facts that might help you avoid blood, guts and feathers at altitude:

Energy equals one half the mass times the velocity squared. In other words, a few pounds of feathers can tear hell out of an airplane.

Most birdstrikes occur at altitudes less than 5,000 feet above the ground.

Flying at low airspeeds gives you more time to take evasive action when you see a bird on a collision course with your aircraft and causes less damage should birdstrike occur.

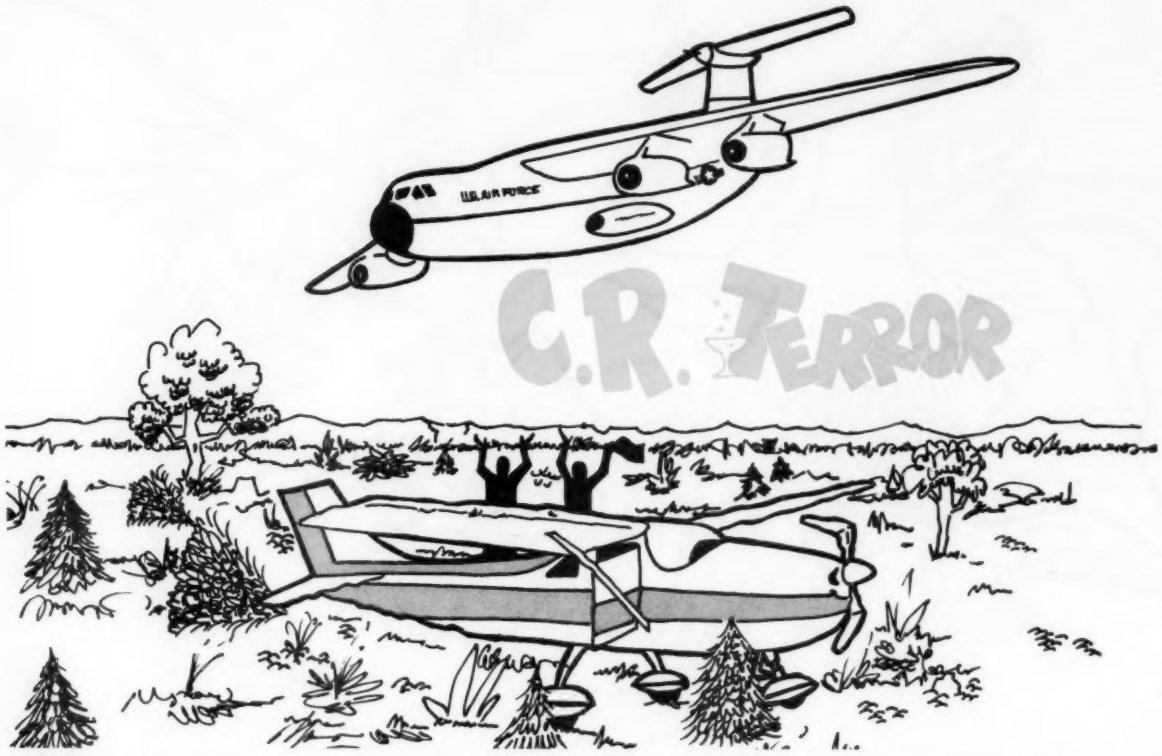
Landing lights can be used to signal birds that you're in the area. They don't like collisions either.

Large flocks of birds can sometimes be painted on radar. Approach control occasionally provides information on suspected bird formations.

A pair of extra eyes scanning outside during takeoff and landing can help you avoid feathered birds as well as those of the man-made variety.

While these measures may not reduce the birdstrike rate to zero, perhaps they will help some of you establish a kind of detente with nature's birds — and a better operational ready rate for our own.

Taking advantage of a Crash Position Indicator signal, C. R. in his C-141 swoops down and suddenly becomes "King One" in a search and rescue effort.



Now, Sammy m'boy, think I'll slide m'seat back a bit and rest m'weary bod from the strains of responsibility," Said C. R. as the Starlifter cruised smoothly throughly the October sky. "Got the autopilot locked on and all you have to do is make sure the little white line stays centered." C. R. grinned at Sammy as he arched his seat back for a no-notice nap.

Relishing the upcoming RON at Tinker, the Aviator with Avoirdupois drifted off in pleasant anticipation of an evening with old acquaintances, el vino, and the intoxicating companionship of Tassels Taylor.

Sam settled things down to a well-organized routine of radio calls to center and kept the aerospace steed on the center of Jet 14 as the C-141 clipped along at 450 true. Meanwhile, the headset still clamped around his ears, the Slumbering Skipper snored contentedly.

Suddenly, a crash position indicator commandeered guard frequency with its ear-piercing alarm.

"Yeeoooooww!!" C. R. bolted upright like a wooden soldier. "Oxygen masks on! Inflate life vests! Mayday!"

"Easy, Boss. Slow down. Everything's okay. It's only an ELT or a CPI signal on guard frequency. We're still humming along without a hitch at thirty-five grand," soothed the second-in-command.

"Ahem, very good, Sammy. Your cool reaction to my no-notice, simulated incapacitation definitely shows there's a shred of hope for your eventual upgrade. I knew all along it was an emergency locator beacon. Probably someone on the

ground checking one," rationalized the Rotund One.

"Sir, you may be right, but I think we oughta notify Memphis Center. It could actually be someone in distress," suggested Sammy.

"Tut, tut, For a minute there I thought I had spotted a glimmer of aeronautical erudition m'boy, but I see you're once again indulging in hasty generalizations. Look out the window 'n what do you see, Sammy? No one could be in distress in such a beautiful sky," philosophized the Pompus Pilot.

"All Center needs to initiate a communications search is the time and location of initial reception, the area of strongest transmissions, the time and location the signal was lost, and our altitude," explained Sammy.

Suddenly recognizing his situation as a golden opportunity to honcho a possible low level search and rescue mission, the Master Manipulator replied, "Yeah, Sammy, those Center and AFRCC controllers could probably use some actual practice pinpointing the source of that irritating black box. Go ahead and give them all the particulars and advise 'em we're gonna lend a hand, heh, heh," chuckled C. R.

Cinching his seatbelt and shoulder straps securely, C. R. slammed the throttles back to the stops, thrust the spoiler lever to the flight position, and rolled the Starlifter into an 80-degree bank.

"Wwhhheeeeee!" shouted C. R. as the plane plunged downward, "In no time at all we'll be skimming the weeds, Sammy. We'll get a bead on that beeper with a masterful manipulation of the ole wing shield and build-fade procedure," blurted the Bender of Spars and SAR's.

The rapid series of aeronautical gyrations and oscillating G loads took its toll on the Dynamic Driver as the previous evening's consumption of Terrorific Martinis hit C. R. with the old one-two. Feeling the urgent need to depart the cockpit to restore gastrological equilibrium, C. R. turned the aircraft over to his faithful sidekick. "You got it, Sammy. I'm gonna make a quick trip down into the cabin to make sure the aircraft is holding up under the strain. They don't make 'em like they used to," blurted C. R., darting out of the flight deck.

Sammy took the opportunity to recover from C. R.'s last three-G, wing shield maneuver. As he steadied the aircraft on an even keel, Suffering Sam requested Memphis Center to alert the Air Force Rescue Coordination Center at Scotch AFB for a possible SAR. Memphis acknowledged the request.

Upon receipt of Memphis Center's advisory, the AFRCC duty controller at Scotch issued the launch order for a Little Stone AFB Huey to locate the distress signal.

In a few minutes, C. R. returned to the cockpit. "How come this T-tailed silo is in level flight? Ya can't find fellow aviators in distress by boring holes in the sky straight and level, m'boy," barked C. R.

"B-but, Sir, Memphis just called and said that a Rescue Huey is on the way to check out the situation," replied Sam nervously.

"M'boy, by the look on your face, it's plain to see that your familiarization with Huey is lacking. With our abundant fuel supply, we'll keep on truckin' in the area till we find the crash site; then we'll FAC the Huey in for a quick pickup — just like SEA," pledged the Able Aeronaut.

The Huey crew that had been scrambled to investigate watched with disbelief as the silhouette of a C-141 just below them banked wildly in a random series of orbits.

"What the hell does that guy think he's doing," the helicopter pilot remarked to his copilot. "Contact Memphis and have 'em clear all aircraft out of the area."

"There it is, there it is, Sammy m'boy. We've hit paydirt. Looks like a Cessna tried to make a forced landing and pranged," bantered the Round One. "Look, survivors waving their shirts near the plane."

"Sir, Memphis directed all air-

C.R. TERROR

craft to clear the area for the rescue effort," insisted Long Suffering Sam.

"Tut, tut, tut. We are the rescue effort. Tell Memphis that our call sign is now 'King One' and we're in charge. When the chopper arrives, I'll FAC him in for the save. If I only had a couple of 'willy petes,' I'd roll 'er over and smoke the target for the strike, er, chopper," declared C. R.

"The rescue Huey's at eleven o'clock high, Sir. Think we should depart the area and let the helicopter go it alone?" hinted Sam.

"Nonsense!! If we leave, he might never find the Cessna. I'll climb up above him, swoop down in front of the Huey, and FAC him all the way in," revealed C. R.

"That 141, he's heading right toward us. I think he's trying to kill us," cried the helicopter pilot. He entered an autorotation and leveled off just above the treetops.

"What got into that helicopter pilot?" cried C. R., disappointed. "Guess that plumber doesn't appreciate the finer points of forward air controlling."

Sammy made one last attempt to influence his boss to call off his acrobatic show. "Hey, Boss, I think we could expedite the rescue if we flew, ah, top cover on the Huey. We could honcho the whole show without the helicopter getting in our way."

"Sammy, that's what I call a pure stroke of genius. I may even recommend you for AC upgrade after the awards presentation," conceded C. R.

With the 141 flying high above, the Huey crew landed, treated the survivors for minor injuries, and departed for Little Stone AFB.

"Ah, King One, Memphis Center. Air Force Rescue Coordination Center at Scotch advises that diversion has been authorized by wing and directs you to divert to Little Stone AFB," radioed the controller.

In less than ten minutes, the Starlifter entered the traffic pattern and landed. It now approached the marshaller and a covey of brass on the ramp.

"Hot damn, Sammy, I bet we're in for some Air Force jewelry like Air Medals for running the SAR and saving two lives. We'll surely get our pictures taken for the 'Good Show' in THE MAC FLYER, m'boy," predicted C. R.

"Sir, judging by the look on that colonel's face," sighed Long Suffering Sam, "I think we'll end up a 'Quick Stopper,' instead."

How Do You Fit In?

- C-141 aircraft commander
- Total C-141 time: 1,000 to 1,300 hours
- Total flying time: 1,300 to 1,800 hours
- Total C-141 experience: 26 to 34 months
- Aircraft commander-qualified for less than 16 months
- No low altitude transport experience
- Currently averaging less than 10 flying days per month
- Age 27 to 31

What do you see in this drawing? Right, a MAC pilot. It doesn't take a Pentagon boss to figure that out. In this case, we've made him a MAC aircraft commander.

While our artist has pretty well captured the look of a typical aircraft commander, there's something else in the illustration that calls for an explanation. The shadow represents a "window" or time period through which pilots pass while accumulating flying experience. The window is based on age, experience, monthly flying time, and other factors.

Look closely and, if you're an aircraft commander, you may be surprised to find the description is of yourself. It fits a surprisingly large number of MAC AC's. But the interesting thing is that it also fits each aircraft commander-qualified pilot who died in the Torrejon, La Paz, and McChord C-141 crashes. They never made it through the window.

Statistics may be used to prove many things, and no one is implying that if you fit into this category you should rush out and sign up for another insurance policy. But statistics often identify trends and if the description fits you like a glove, don't disregard its implications entirely. A little extra caution while flying may be in order. Why not? There's nothing to lose by being cautious.

Quick Stoppers

What's Wrong?

Investigation of a recent accident revealed deficiencies in the use of life support equipment. One crew member, occupying a bunk, sustained injuries when he became wedged between cockpit structural members when the plane crashed shortly after a touch and go. A seat and seat belt were available but not used.

Of the crew members who escaped from the tangled, burning wreckage, only one was wearing his Nomex flight gloves. Other crew members had stuffed theirs in their flight suit pockets.

Darkness and low visibility made it difficult for ground rescue personnel to locate crash survivors — except for one who signaled with a pocket flashlight. Such flashlights (Stock No. 6330-00-635-4998) are authorized for aircrew members and are available at Equipment Management Offices.

Egress from the interior of a wreckage may be exceedingly difficult at night, especially if emergency exit lights are destroyed or fail to function. Could you find your way out in such a situation? Do you know exactly where the crash axe is located? And could you signal rescue personnel? If not, you could end up on the short end of the stick.

Go-Around Attempted

A pilot who was relatively unfamiliar with a twin engine Cessna he was flying made a touch and go and retracted the gear after takeoff. On the next approach, he failed to extend the landing gear. Just prior to landing he realized his mistake as both props gouged deeply into the asphalt surface, extensively damaging the blades. He advanced the throttles in a go-around attempt, but flying speed was not or could not be maintained. The aircraft rolled right, then left, pitched up, rolled back to the right, and crashed. It exploded on impact, killing both occupants.

Following an almost instinctive reaction to extricate himself from an untenable position, the pilot's decision to initate a go-around appears to have been a fatal judgmental error. Investigators concluded that had the pilot considered the irreversibility of a wheels-up landing, he probably would have stayed on the ground and suffered no injury.

— Adapted from NTSB Report A-75-53

Short on Screws

Non-MAC maintenance personnel at an overseas base completed repairs on a C-141 fuel manifold and replaced the wing access panel. But during takeoff roll an alert SOF observed something separating from the aircraft. The something turned out to be the wing access panel. By the time the crew got the word, they were nearer to another base and landed without incident. Back at the departure base, the panel was recovered undamaged. It was completely void of fasteners and none were found on the runway. The maintenance troop who had performed the work was tracked down and "briefed" on the incident. The lesson? Take a couple of minutes to visually check work signed off in the forms, especially at stopovers where C-141's may be strange beasts to the local wrenchbenders.

Visors Down

While flying multiple touch and go landings, a Navy jock's jet trainer windshield was shattered in a collision with a medium-size bird. The impact ripped a triangular-shaped hole in the windshield and spewed windshield fragments and bird remains squarely on his helmet visor, temporarily blinding him. He raised the visor, assessed the situation, declared an emergency and pressed on to an uneventful landing. Fortunately for this pilot, his visor was down at the time of the bird strike. Although helmets and visors are uncommon to most MAC aviators, Rescue's sling-wing drivers should consider the advantages of flying with visors down.

Electrical Puzzle

A crew turned over their aircraft to maintenance personnel following a training mission. It wasn't long before post flighters discovered several pinhead-size holes in the aircraft skin on the left wing, right inboard flap, and along the right side of the fuselage. Capping off the puzzling discoveries was a burned left wingtip. Investigators initially suspected heavy discharges of static electricity but later concluded that a lightning strike caused the damage. However, at no time during the flight did the aircraft encounter a thunderstorm area. Anyone out there with an explanation?

Hot Cells

No, this isn't about thunderstorms or spending a steamy summer night in one at your friendly neighborhood slammer. It's about mixed up battery cells.

During touchdown, a UH-1F crew spotted smoke venting overboard from the battery compartment. Seconds later, a strong acrid odor filled the Huey cockpit. The pilot shut off the overheating battery and accomplished appropriate emergency procedures. Maintenance troops traced the probable cause of the malfunctioning battery to incompatible battery cells.

Apparently someone overlooked the Huey safety supplement prohibiting the intermixing of different brand name battery cells (Marathon and Sonotone). A one-time inspection by units using this battery has been recommended.

Missing Sleeve

Qs

An H-53 was cruising at 9,000 feet when one of its main rotor blades separated from the aircraft. The ensuing asymmetric rotor imbalance caused immediate separation of the remaining rotor blades and the breakup of the aircraft.

Inspection of the wreckage revealed a fatigue crack on the sleeve attaching the rotor blade to its hub. Analysis of the sleeve revealed that during a previous overhaul, the internal surface had been machined to remove corrosion pitting. Following the machining process, a steel liner was to have been inserted to return the inside diameter of the sleeve to its original specification. But the liner was never inserted. Without the liner, excessive stress and fatigue cracking progressed to ultimate failure.

This accident serves as a traffic reminder of how a lapse in job performance can affect the lives of many.

Runway Illusion

The four engine jet was being delivered to the contractor for modification. The pilot was in the right seat making the landing (so, no anti-skid was available) to a runway 7,200 feet long and 100 feet wide.

About two miles out the pilot noticed antennas near the approach end of the runway and elected to fly a somewhat steeper approach than normal. His cross-checks indicated correct airspeed, proper aircraft configuration, normal power setting, and good aircraft position. But the touchdown was much harder than he expected. So hard, in fact, that his feet were thrown upward, off the rudder pedal heel rests, and his right foot inadvertently tapped the brake, blowing the number four tire. The big bird yawed slightly to the right but judicious application of opposite rudder by the pilot got things back under control.

The "hard landing" was attributed to the pilot's misjudgment of actual height above the ground. He flew the aircraft into the runway without sufficient round out.

This misjudgment was probably caused by the illusion created when approaching a relatively short and narrow runway. This might have given the pilot the false impression that the aircraft was higher than it actually was.

Grounded Scanner

"Clear number one engine," the copilot directed. Since there was no response from the loadmaster, who was acting as fire guard, the aircraft commander looked out the window. The scanner was laying on the ramp near a fire extinguisher. The AC immediately shut down the three turboprops. Another loadmaster left the aircraft to assist the prostrate crew member. In a few minutes, the scanner was back on his feet and said he felt okay. As a precaution, he was taken to the military dispensary where the doctor there found him uninjured.

What had happened? The loadmaster said that he took hold of the fire extinguisher cart handle to position it for number one engine start and was knocked to the ground by an electrical charge. He was on headset and the aircraft ground wire had been removed. There was thunderstorm activity in the vicinity about the time the C-130 crew was performing the engine-start checklist. Cloud-to-ground lightning had been observed less than one mile from the aircraft.

The cause of this shocking experience is believed to be a static discharge through the interphone cord from the ungrounded aircraft.

A checklist change that will delay removal of the aircraft ground wire is being staffed.

after deadline . . .

TWO MAC FLYER EDITORS WANTED -- Next June, two of our editors will complete their three-year tours with THE MAC FLYER. To replace them, we are looking for two pilots with the rank of either captain or major. One must have an airlift background, and the second must possess either a helicopter or airlift background. Although not mandatory, a journalism or writing background is desired for both positions. Applicants should have a reasonable writing ability and, more importantly, a strong desire to write. Desired availability is no later than April. For more information, contact: Supervising Editor, THE MAC FLYER, MAC/IGFE, Scott AFB IL 62225. AUTOVON: 638-3534/5542.

ILLUSTRATOR WANTED -- In March 1976, THE MAC FLYER will require a seven-level illustrator, AFSC 23171, to assume duties as Art Director for the magazine. Applicant should be available no later than January 1976 for overlap with the present art director. Specific duties include originating artwork involving line, wash, acrylic, and other contemporary techniques; laying out camera-ready copy in magazine format; cropping, sizing and retouching photographs; adapting visual presentations from magazine copy; and using color in designing layouts. Desired qualifications include previous magazine experience as an illustrator, the ability to work well with others, and the ability to meet mandatory monthly deadlines. For more information, contact: Supervising Editor, THE MAC FLYER, MAC/IGFE, Scott AFB IL 62225. AUTOVON: 638-3534/5542.

FAREWELL AND WELCOME -- The staff of THE MAC FLYER wishes to use these few lines to acknowledge the retirement of the PACAF *Professional*, the PACAF safety magazine.

The magazine was retired after only four and a half years of service and leaves behind a legacy of knowledge and experience via the written word. And so to the PACAF *Pro* and its staff: farewell and (in the same breath) a hearty welcome to you former PACAF airlifters.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1975-665-669/Z

Touch and Go

YOUR MISSION, IF YOU CHOOSE TO REMAIN HERE AND VOLUNTEER, IS TO FLY THIS FUEL ECONOMY MODEL TO TRAVIS WITH STOPS AT...